ANNUAL INDEX

To Electronic Industries for 1946

The Annual Index has been arranged by subjects for easy reference to related topics. The first figure indicates the month in which the article appeared; the second figure indicates the page.

ABS—Abstract NPI—New Patents Issued SWR—Survey of Wide Reading TOJ—Tubes on the Job

I COMMUNICATION

AERONAUTICAL RADIO

Aircraft Plotter....ABS 3-74
Microwave Instrument Blind Landing System 2-60
The Block System for Airway Control 12-54

BROADCAST

FM Broadcast Transmitter 4-4
Protecting Against Carrier Failure....Towlson 11-68
Two-Studio Console 4-71

CARRIER CURRENT

Carrier Telephone....TOJ 2-92
Radio-Telephone Circuit 2-4

FACSIMILE

CR Tube Facsimile....TOJ 8-77
Facsimile Methods for Broadcast Work 6-74

MODULATION SYSTEMS

Amplitude Modulated Pulse System....SWR 3-97
Concentric Line FM Transmitter for 250 W 2-78
Diversity System....NPI 3-104
Dynatron Frequency-Divider....NPI 7-82
Engineers Study FM 5-66
Experimental FM Antenna 1-126
FM-AM Conversion at UHF....NPI 7-82
FM Broadcast Transmitter 4-4
FM Monitors....ABS 5-70
FM Noise Squelching System....NPI 11-84
FM Operating Problems....ABS 5-70
FM Pulse Receiver....NPI 7-82
FM Systems Engineering....Batcher 4-75
FM Systems Engineering 4-Sup
Freightyard Radio Network....TOJ 1-90
Frequency and Phase Deviation 4-69
Frequency Modulator....NPI 1-118
High Frequency FM Signal Generator 4-86
Laboratory Receiver....Frankart 2-71
Larger FM Carrier Suppresses Smaller....Shea 4-78
Miniature Tubes for FM....ABS 3-66
Modulation by Means of Light Interferences....NPI 5-102
Phase Shifter....NPI 3-106
Phasitron Converts from AM to FM Directly 1-78
Point-by-Point Construction of FM Wave 4-77
Propagation Effects 2-65
Pulse-Time Modulation....SWR 7-80
Removing Pulse Noise....NPI 10-82
Test Oscillator for New AM FM Tele Needs....Muller 2-86
Velocity Modulation....ABS 3-73
WHFM's FM Converter....Gardner 4-80
Wide Phase Shift Modulator....SWR 4-98

GENERAL

Electronic Naval Warfare....ABS 3-73
Light Signaling Apparatus....NPI 8-96
Navigation System....ABS 3-74
Protecting Against Carrier Failure....Towlson 11-68
Relay Control Circuit....NPI 3-104

INTERNATIONAL SHORT WAVE

Canada's New Short Wave Transmitters....Seabrook, Quance.7-72
Propagation Effects 2-65

RADIO RANGING AND DETECTION

Aircraft Plotter....ABS 3-74
Anti-Radar 7-57
Canadian Airways Monitor....SWR 10-80
Direction Finder..NPI 1-120
Germany's UHF Tubes 3-162
HF Power for CW....ABS 3-66
High Speed Switch 2-171
IRE AIEE Engineers' Radar Symposium 1-124
Locating Guns ....NPI 11-84
Loran Indicator Circuit Operations....Davidson 3-84
Magnetostrictive Radar Clock....NPI 9-102
Microwave Approach and Landing System....Spicer 8-52
Microwave Instrument Blind Landing System 2-60
"Navar" & "Navaglobe" Proposed for Airplane Navigation ...3-60
On Radar ....SWR 8-79
Operational Principles of Racon Equipment 4-87
Peacetime Radar....TOJ 4-93
Radar Assembly and Testing Operations 2-84
Radar Beacons ....ABS 3-74
Radar Countermeasures 3-60
Radar Countermeasures 2-66
Radar Indicates Meteors....SWR 7-81
Radar Principles....SWR 11-83
Twin Bearing DF Unit 3-79
Visual Direction Finder....ABS 3-73

RECEIVERS

Die Cast Chassis 8-51
FM Pulse Receiver....NPI 7-82
Laboratory Receiver....Frankart 2-71
Limiter Circuit....NPI 3-106
Selective FM Receiver....NPI 4-110
Separating FM Signals....NPI 4-110
Superregenerative Receiver....NPI 11-84
Supersonic Detection 2-166
Tele Color Reception 4-82
Television Receivers....ABS 3-62
Theory and Design of Double-Tuned Circuits....Stone, Lawson.4-62
Use of Limiter Output of Two Similar Input Waves....NPI...4-110

RECORDING AND TRANSCRIBING

Disc Recording ....Chinn 11-64
Engineering Features of Recording Equipment 3-70
FM Oscillator-Discriminator Circuit....SWR 4-100
FM Phonograph Reproducer....NPI 2-106
Nuernberg Trials Recording System....Erhorn 6-70
Recording Styli....Capps 11-65
Recording Technics ....ABS 5-67
Reproducing Sound Film....SWR 9-100
Visual Signals for Accurate Cueing 2-178

SOUND EQUIPMENT

Decibel Meter for Broadcasting Stations....SWR....11-83
Dynamic Microphone....SWR 2-99
Outdoor Sound Propagation....SWR 8-79
Phonograph Pickup Using Strain Gage....Germeshausen, John.11-78
Radio Translator System for Audiences....TOJ 12-74
Reproducing Sound Film....SWR 9-100
Tuned-Ribbon Pickup....Leidel, Payne 10-67
Ultrasonic Vibrations Reveal Hidden Flaws 1-64

TELEVISION

Bell System Readies Tele Networks 2-167
CBS Shows Its Color 3-75
CBS Tele Antenna....Sather 7-68
Color Television—Is It Ready to Adopt? 4-88
Combined Sight & Sound....ABS 3-62
Engineering Television Antennas for Home Use 1-124
Engineers Study TV 12-63
"Foot-Lambert" Unit of Picture Brightness 10-57
490 MC Transmitters....ABS 3-62
Iconoscope Generating AM RF Carrier....NPI....12-78
Infra-Red Inhibitor Picture Transmission....NPI 10-82
Intra-Store Television 3-156
Lens Aberration in Picture Projection....Montani 1-86
Magnetic Focusing and Deflection....Rawcliffe, Dressel 10-52
Modern Tele Camera Unit 8-58
Multi-Outlet TV 10-57
N. Y. Public Library to Feature Tele 3-155
Phosphors and Their Behavior in Television....Krushel 1-92
Projection Kinescope....ABS 3-62
RCA Color TV Status 3-102
RCA Reveals First Electronic Color TV 12-58
Remote Tuned Antenna 2-77
Re-Radiation Affects Video Contrast....SWR 8-79
Rhombic Antennas for Television....Minter 10-58
Right Antenna Essential to Television Success 10-78
Smell Television 2-126
Sources of Television Interference 7-Sup
Stagger Tuned Amplifiers....ABS 3-73
Stratovision....ABS 5-69
Studio Equipment....ABS 3-62
Surveying Recent Television Advances....Batcher 10-46
System Standards 10-72
Tele Color Reception 4-82
Tele-Guided Missils 5-62
Tele Interference—Engineering Problem, Part I....Goldsmith..7-60
Tele Interference, Part II....Goldsmith 8-73
Television Applications Filed for 187 Stations 3-156
Television Progress 1941-1946 ....10-Sup
Television Receivers....ABS 3-62
Television Station Operation....ABS 5-69
Television System Characteristics....ABS 3-64
Television Today
  Resonance Type Power Supplies 1-116
  Sees Theater Tele Nosing Out Movies 1-116
  TBA Re-elects Officers 1-116
  FCC Allocates Metropolitan Frequencies 2-108
  Argentine Experts Study US Tele 2-108
  Institute Honors Hartley, Goldmark 2-108
  WBKB Ups Schedule 2-108
  Tele Broadcast Temporarily Quit 4-106
  Cut Tele Hours 4-106
  FCC Urged to License UHF Color Television 4-106
  Color Only—Zenith 4-106
  GE Tests Television Relaying From Blimp 4-106
  Philco Develops New Suitcase-Type Camera 4-106
  Westinghouse Tests Stratovision Unit 4-106
  Westinghouse Granted Color Tele License 5-104

TELEVISION (Continued)

UNO Council Opening Televised 5-104
DuMont Adds 5-104
Intra-Auditorium Vision Relay 5-104
Six Tele Companies Cover Bomb Test 5-104
Philco Withdraws in Philly-Wash 5-104
WBKB Switches Channels 5-104
Color Television by Coaxial Cable 6-86
9,603,000 Considering Television Purchase 8-86
CBS Licenses Bendix 8-86
DuMont's Capitol Tele 8-86
Shupert Heads ATS 8-86
"Airpress" 8-86
How NBC Televised Louis-Conn Fight 8-86
TRA Tele Exhibit Practically Sold Out 9-112
DuMont Video for Detroit's WWJ 9-112
Bikini Tele 9-112
French Plan Fax Newspaper Venture 9-112
Radar for Stratovision 9-112
Electronic Newspaper Trial in 12 Cities 9-112
GE Will Operate Microwave Relay Net 9-112
CBS Signs Ford 9-112
CBS Shows Color-TV at 16 Ft.-Lamberts 11-90
Tele for Cleveland 11-90
Tele for Schools 11-90
Test Oscillator for New AM FM Tele Needs....Muller 2-86
30 KV Power Supply....Baumann 10-77
TV Reconnaissance 5-96
TV Test Equipment....Hunter 10-49
Washington-N.Y. Telecast 3-155
Wide Band Amplifiers for Television Receivers 3-4

TRANSCEIVERS

Mobile Radio Service 4-84

TRANSMITTERS

Automatic Positioning Control Mechanics....Hale, May 1-58
Canada's New Short Wave Transmitters....Seabrook, Quance..7-72
Concentric Line FM Transmitter for 250 W 2-78
490 MC Transmitters....ABS 3-62
FM Railroad Satellite System....Halstead 6-62
RCA Color TV Status 3-102
Supersonic Detection 2-166
Voice Transmission System....NPI 5-102

INDUSTRIAL COMMUNICATION SYSTEMS

Aieron Induction RR Radio Authorized 5-98
Radio Telemetering ....ABS 3-72

UHF COMMUNICATION

Arrival of Microwaves....ABS 3-72
Atmospheric Ducts in Propagation..ABS 3-71
Broad Band Antennas....ABS 3-65
Cascaded Klystrons....ABS 3-67
Complementary-Diversity Microwave Reception 7-141
Directional Couplers....ABS 3-72
Germany's UHF Tubes 3-162
HF Power for CW....ABS 3-66
IRE-URSI Convene 7-75
Magnetron Cathodes ....ABS 3-66
Metal-Lens Antennas....ABS 3-65
Microwave Stabilization....ABS 3-66
Microwave Triodes....ABS 3-65
Propagation Effects 2-65
Propagation in Ocean Ducts....ABS 3-71
Radio Lens ....SWR 7-81
Rain Effect on Microwaves....ABS 3-71
600 MC Triode ....ABS 3-65
Six MM Wave Propagation....ABS 3-71
Sky-Wave Propagation....ABS 3-72
Spark-Generated Waves....SWR 5-D48
Theory of Magnetron Tubes & Their Uses....Shea 1-66
Tunable Microwave Cavity Resonators....Guarrera 3-80
UHF Oscillator....NPI 8-80

RADIO RELAY SYSTEMS

FM Railroad Radio Satellite System....Halstead 6-62
Radio Relays ....ABS 5-69

AMPLIFIERS

Amplifier....NPI 4-110
DC Amplifier Coupling....NPI 1-118
HF Amplifier....NPI 7-82
Remote Amplifiers for Broadcast Service....Wulfsberg 12-70
Selective Amplifier....NPI 3-104
Stagger Tuned Amplifiers....ABS 3-73
Wide Band Amplifiers for Television Receivers 3-4

STUDIO EQUIPMENT

Decibel Meter for Broadcasting Stations....SWR 11-83
Remote Amplifiers for Broadcast Service....Wulfsberg....12-70
Studio Control Unit....Peterson 12-68
Studio Design....ABS 5-67
Studio Equipment....ABS 3-62
Two-Studio Console 4-71

TELEGRAPHY

Code Typewriter....TOJ 10-79
Multiplex Telegraph System....NPI 10-113

ANTENNA SYSTEMS

Feeding Combined FM and AM Antenna Arrays....Pritchett..4-72
Protecting Against Carrier Failure....Towlson 11-68
Rhombic Antennas for Television....Minter 10-58
Right Antenna Essential to Television Success 10-78
Multi-Outlet TV 10-57

II CONTROL

GENERAL THEORY

Industry Studies New Circuit Technics 9-66
Selecting Proper Tubes and Circuits 9-72
Vacuum Tubes in Instrumentation....Batcher 9-80

PROCESS CONTROL SYSTEMS

Carbon Black Weighing....TOJ 11-80
Dynamic Balancing....TOJ 12-74
Instrumentation 5-71
Piston Ring Gage....TOJ 1-91
Supersonic Tire Tester....TOJ 11-80

SPEED CONTROL

Electronic Governor....SWR 9-101
Reel Regulator....TOJ 9-99

TIMING CONTROL

Electronic Cueing Device....TOJ 8-76
Electronic Metronome....TOJ 7-78
Electronic Timing of Sequence Photographs....Coles 2-74
Measuring Time....TOJ 4-93
One Tube—One Relay Multi-Time Circuits....Wouk 7-48

TEMPERATURE CONTROL

Air Drying 2-174
Control for Electric Heat....TOJ 3-94
Humidity Recording 2-172
Thermal Detectors 9-87

POSITIONING

Automatic Positioning Control Mechanisms....Hale, May 1-58
Electronic Control for Projector Arcs....TOJ 12-74
Remote Tuned Antenna 2-77

CONTROL EQUIPMENT

Electronic Governor....SWR 9-101
Industrial Relay Control Circuits....Batcher 2-94
Magnetic Control of Anode Current....Knight 12-72
New Power Operated Sensitive Recorder....Weiller 1-88
Saturable Reactors for Automatic Control....Cockrell 12-48
Telemetering for Project Crossroads....Colton 9-76
Tribo-Electric Metal Sorting....TOJ 6-76

MISCELLANEOUS

Chemists Want Super Reliability....Ewald 9-85
Electronic Control for Projector Arcs....TOJ 12-74
Electronic Metal Detector....TOJ 8-76
Electronic Valve Testing....TOJ 11-81
Food Industry Bettering Quality....Steele 9-86
Industrial Electronic Measurement & Control 9-Sup
Oilmen Seek Expanding Utility....Roess 9-85
Production Checker....TOJ 11-80
Radio Telemetering....ABS 3-72
Supersonic Tire Tester....TOJ 11-80
Telemetering for Project Crossroads....Coltman 9-76
Thermal Detectors 9-87
Vacuum Tubes in Instrumentation....Batcher 9-80
Walnut Sorting....TOJ 5-78

RECORDERS

Electronic Valve Testing....TOJ 11-81
Humidity Recording....Maier 7-70
New Power Operated Sensitive Recorder....Weiller 1-88
Piezoelectric Recorder....SWR 11-83
Power Level Recorder....ABS 3-73
Radio-Sonde Recording of Potential Gradients....SWR 8-79
Recording Potentiometer....ABS 3-72
Recording System....NPI 6-82
Recording Thermal Expansion....TOJ 11-81
Telemetering for Project Crossroads....Coltman 9-76

PHOTOELECTRIC EQUIPMENT

Automatic Furnace Discharge Indicator....TOJ 2-93
Carbon Black Weighing....TOJ 11-80
Electric Eye Controlled Air Scoop....TOJ 11-80
Paper Tester....TOJ 2-92
Production Checker....TOJ 11-80

COUNTING

Differential Analyzer 10-62
Electronic True Decade Counters....Shea 9-82
Radioactivity Meter for Nuclear Research....Bousquet 9-88
Super Electronic Computing Machine....Burks 7-62

COLOR TESTING

Automatic Bean Sorter....TOJ 4-92

III INSTRUMENTS and MEASUREMENTS

ACOUSTICS AND SOUND

Acoustic Laboratory 3-78
Computing Intermodulation Products....SWR 11-82
Decibel Meter for Broadcasting Stations....SWR 11-83
Film Noise Spotter....SWR 7-120
Measuring Audio Intermodulation....Pickering 6-56
Power Measurements at Audio Frequencies....Waidelich 2-68
Z-Meter....Packard 12-42

ELECTRICAL MEASUREMENT, GENERAL

Aerial Prospecting....SWR 9-101
Determining Low Susceptibility....SWR 10-80
Frequency Measurement With Deflection Modulated CR Tube....SWR 1-97
Low-Resistance Ammeter....SWR 6-80
Measuring Contact Potential Differences....SWR 7-81
Measuring Contact Potentials....SWR 4-98
Measuring Saturation Currents....SWR 10-81
Megavoltmeter....SWR 10-80
Phase Sensitive Bridge Detector....Hunter 6-60
Portable Electrometer....SWR 2-99
Power Level Recorder....ABS 3-73
Production Bridge for Incremental Tests....Muller 5-72
Proposed Test Coils 1-71
Self Balancing Potentiometer....TOJ 10-79

ELECTRICAL MEASUREMENT, GENERAL (Continued)

Self-Inductance of Toroidal Coil....SWR 3-96
Sensitive Galvanometer Amplifier....SWR 3-96
Universal Chart for Unbalanced Bridge....Paine 11-72

INSTRUMENT ACCESSORIES

Power Measurements at Audio Frequencies....Waidelich 2-68
Thermal Detectors 9-87

INSTRUMENTATION, GENERAL

Elements of a New Oscilloscope Design....Simmons 9-96
Industrial Electronic Measurement & Control 9-Sup
Instrumentation 11-59
Instrumentation 5-71
Instrument Trends....Heinz 11-55
Vacuum Tubes in Instrumentation....Batcher 9-80

MEDICAL INSTRUMENTS, ELECTRONIC

Brain Wave Recorder in Medical Diagnosis....Offner 1-72
Electro-Cardiograph....TOJ 5-79

PHYSICAL MEASUREMENT

Alloy Analysis....TOJ 1-90
Electronic Gaging....Hunter 9-68
Electronic Valve Testing....TOJ 11-81
"Foot-Lambert" Unit of Picture Brightness 10-57
High Dispersion Electron Diffraction....SWR 3-97
Humidity Recording....Maier 7-70
Indicating Changes in Concentration..SWR 2-100
Ionization Gage Indicator....SWR 8-78
Measuring Contact Potentials....SWR 4-98
Network Design Using Electrolytic Tanks....Kenyon 3-58
Radio-Sonde Recording of Potential Gradients....SWR 8-79
Rubber Weighing....TOJ 9-98
Spectrum Analyzer....TOJ 8-77
Steel Temperatures....TOJ 4-93
Stress Measurements on Steel Trusses....TOJ 9-99
Telemetering for Project Crossroads....Coltman 9-76
Thermal Detectors 9-87

PRODUCTION TESTING

Coil Short Tests....Chalfin 5-77
Electronic Metal Detector....TOJ 8-76
Electronic Wheel Balancer....TOJ 9-98
Inspecting Steel With Million-Volt X-Ray Unit....SWR 8-79
Inspection of Castings....SWR 11-83
Paper Tester ....TOJ 2-92
Production Bridge for Incremental Tests....Muller 5-72
Production Checker....TOJ 11-80
Proposed Test Coils 1-71
Room-Noise AVC....TOJ 6-77
Supersonic Flaw Detector....NPI 10-82
Surface Defect Detector....SWR 8-78
Ultrasonic Vibrations Reveal Hidden Flaws 1-64
X-Ray Inspection of Castings....SWR 8-79

RADIATION MEASUREMENT, ELECTRO-MAGNETIC

Aircraft-Antenna Measurement....ABS 3-65
Beam-Shaping Methods....ABS 3-64
Geiger Counter Spectrometer in Powder Metallurgy....SWR...8-78
High Speed Radiography....ABS 3-72
Radioactivity Meter for Nuclear Research....Bousquet 9-88
Uranium Prospecting....TOJ 2-92

RADIO FREQUENCY MEASUREMENT

Arrival of Microwaves....ABS 3-72
Directional Couplers....ABS 3-72
Electron-Optical Method for Field Testing....SWR 11-82
High Frequency FM Signal Generator 4-86
Measuring Balanced Pair Cables at HF....SWR 2-100
Microwave Test and Measuring Equipment....Jones 11-48
Nomograph for FM Deviation 4-70
Portable Electrometer....SWR 2-99
Propagation in Ocean Ducts....ABS 3-71
Standing Wave Ratio Indicator....NPI 9-139
Tunable Microwave Cavity Resonators....Guarrera 3-80
UHF Impedance Measurements....SWR 7-81
UHF Signal Generator 11-76
UHF Wavemeter....SWR 11-82

THEORY OF MEASUREMENT

Electronic Gaging....Hunter 9-68
Network Design Using Electrolytic Tanks 3-58
Selecting Proper Tubes and Circuits 9-72
Universal Chart for Unbalanced Bridge....Paine 11-72
Vacuum Tubes in Instrumentation....Batcher 9-80

TEST METHODS

Electronic Gaging....Hunter 9-68
Electron-Optical Method for Field Testing....SWR 11-82
Filament Vibrations....SWR 2-100
Microwave Test and Measuring Equipment....Jones 11-48

INSTRUMENTS

Decibel Meter for Broadcasting Stations....SWR 11-83
Electron Accelerator Improvements....NPI 10-82
Megavoltmeter....SWR 10-80
Microwave Test & Measuring Equipment....Jones 11-48
Pulse Generator....SWR 10-81
Recording Thermal Expansion....TOJ 11-81
Self Balancing Potentiometer....TOJ 10-79
Three-Beam Oscillograph....ABS 3-72
TV Test Equipment....Hunter 10-49
UHF Signal Generator 11-76
UHF Wavemeter....SWR 11-82

IV HIGH FREQUENCY HEATING

ANNEALING, HARDENING, TEMPERING

Automatic Bearing Hardening....TOJ 7-79
Automatic Surface Hardening....TOJ 7-79
Control for Electric Heat....TOJ 3-94
Split Coil for HF Heating....TOJ 5-78

BRAZING

Induction Soldering Unit....TOJ 3-95
Making Cooking Utensils....TOJ 6-76
Rotary Heating Jig....TOJ 7-79
Split Coil for HF Heating....TOJ 5-78

DRYING

Dielectric Drying....TOJ 1-91
Vegetable Processing....TOJ 2-93

GENERAL APPLICATIONS AND EQUIPMENT

Case Studies of RF Heating 1-84
Control for Electric Heat....TOJ 3-94
Coupling Method for Dielectric Heating....Kleinberger 6-78
Heat-Sealing Vinylite Play Balls....TOJ 5-79
HF Glass Working....Guyer 12-65
HF Heat Laboratory 11-62
Steel Injection....TOJ 1-90

MOLDING

Steel Injection....TOJ 1-90

STERILIZING AND IRRADIATION

Dielectric Heat Solves Bread Mould Problem 2-174
Meat Preservation....TOJ 3-95
Milk Can Sterilizer....TOJ 3-95

COOKING

Electronic Coffee Roaster....TOJ 7-78
Electronic Weeny Cooker....TOJ 4-92
Hot Food Canteen....TOJ 2-93
Raytheon Radarange Cooks With RF Heat....TOJ 11-80
Reducing Baking Time ....TOJ 4-93

V COMPONENTS

INDUCTORS

Coil Short Tests....Chalfin 5-77
Production Bridge for Incremental Tests....Muller 5-72
Proposed Test Coils 1-71
Saturable Reactors for Automatic Control....Cockrell 12-48
Split Coil for HF Heating....TOJ 5-78

MAGNETIC MATERIALS

Formula for Ferroinductance....SWR 1-96
Powdered Iron Cores....SWR 9-101
Proposed Test Coils 1-71

INSULATION AND DIELECTRIC MATERIALS

Dielectric Drying....TOJ 1-91
Insulation Laboratory 3-76
Manufacture & Use of Glass Bonded Mica....Replogle 4-94
Properties of Mixed Dielectrics....SWR 12-76

RESISTORS AND CONDUCTORS

Determining RF Resistance of Wires....SWR 2-98
RF Resistance of Iron Wires & Permalloy Strips....SWR ...4-100

CONTROL COMPONENTS, RELAYS AND SWITCHES

High Speed Switch 2-171
Ignition System....NPI 12-78
Industrial Relay Control Circuits....Batcher 2-94

TUBES, CHARACTERISTICS AND THEORY

Bettering Output From Power Tubes....Dolinko 12-60
Broad Band Tube 12-57
Cascaded Klystrons....ABS 3-67
Comparison of Beam Power Tubes & Triodes....SWR 5-D48
Current Distribution Between Coaxial Cylinders....SWR 2-100
Design & Performance of the 6AK5 Tube....SWR 12-76
Filament Vibrations....SWR 2-100
Gas-Filled Tube....NPI 11-84
Germany's UHF Tubes 2-81
HF Power for CW....ABS 3-66
High-Voltage Rectifier....ABS 3-66
Iconoscope Generating AM RF Carrier....NPI 12-78
Internally Water Cooled Tele Tube 6-140
Long Persistence CR Tube Screens....Feldt 10-70
Magnetically-Controlled Gas Discharge Tubes....SWR 9-100
Magnetic Focusing & Deflection....Rawcliffe, Dressel 10-52
Magnetron Cathodes....ABS 3-66
Microwave Triodes....ABS 3-65
Miniature Tubes for FM....ABS 3-66
Modern Miracle 2-90
Pentode & Beam Power Tube....SWR 5-D48
Phase Shifter....NPI 3-106
Phasitron Converts from AM to FM Directly 1-78
Phototube for Dye Image Sound Track....SWR 9-136
Positive Grid Current....SWR 5-D48
Projection Kinescope....ABS 3-63
Rising Sun Pulsed & CW Magnetrons....Shea 8-46
Separate Cavity Tunable Magnetrons....O'Neill 6-48
600 MC Triode ....ABS 3-65
Synchronizing Rotating Beam Tube....NPI 3-106
Theory of Magnetron Tubes & Their Uses....Shea 1-66
The Tron Family 1-80
Tube Exciters for Generators 2-178
Tube Glass Problems....ABS 3-73

TUBES, APPLICATION

Magnetic Control of Anode Current....Knight 12-72
RCA Color TV Status 3-102
RCA's "Vibroton" Tube Has Wide Application 7-77
Selecting Proper Tubes & Circuits 9-72
Vacuum Tubes in Instrumentation....Batcher 9-80

PIEZO CRYSTALS

Duplex Crystals 8-63
Stabilizing Frequency in LF Crystal Oscillators....NPI 2-106
Synthetic Quartz....SWR 6-80

CABLES, TRANSMISSION LINES

Discontinuity Effects....Glinski 2-97
Measuring Balanced Pair Cables at HF....SWR 2-100
Transmission Line Impedance Matching....SWR 5-D48

FLUORESCENT MATERIALS

Concentrated Arc Lamp....TOJ 7-79
Phosphors and Their Behavior in Television....Krushel 1-92
Projection Kinescope....ABS 3-63

ANTENNAS

Aircraft Antenna Measurement....ABS 3-65
Antenna Patterns....ABS 5-66
Beam-Shaping Methods....ABS 3-64
Broad Band Antennas....ABS 3-65
Broadside Arrays....ABS 3-64
CBS Tele Antenna....Sather 7-68
Coaxial Feed FM Loop Antennas....Kandoian 5-74
Experimental FM Antenna 1-126
Flight Research on Precipitation Static....Cleveland 8-66
FM Antenna....ABS 3-64
Metal Lens Antennas....ABS 3-65
Remote Tuned Antenna 2-77
Rhombic Antennas for Television....Minter 10-58
Right Antenna Essential To Television Success 10-78
UHF Antennas....ABS 5-68

WAVEGUIDES, CAVITIES

DC Beam-Cavity Oscillator....SWR 4-100
Equations For Resonators....SWR 2-98
Frequency Stabilization of Resonators....SWR 5-D48
Microwave Stabilization....ABS 3-66
Radio Lens....SWR 7-81
Separate Cavity Tunable Magnetron....O'Neill 6-48

NETWORKS

RC Oscillator Design....SWR 1-97
Theory and Design of Double-Tuned Circuits....Lawson, Stone.4-62

MICROPHONES

Dynamic Microphone....SWR 2-99
Oxide Coated Cathodes....SWR 12-77

BATTERIES

Characteristics of Mercury Type Batteries 3-74
Water Activated Cell 11-75

PHOTOCELLS

Electrolytic Selenium Photo-Cell....SWR 7-80
Selenium Photocells....SWR 9-136

MISCELLANEOUS

German Ceramics....SWR 10-80
Glass Scales As Mica Substitute....SWR 10-80
Recording Styli....Capps 11-65
Sintered Glass....SWR 8-78
30 KV Power Supply....Baumann 10-77

VI ELECTRONICS IN INDUSTRIES

AVIATION

Canadian Airways Monitor....SWR 10-80
Flight Path Controller....NPI 8-80
Flight Research On Precipitation Static....Cleveland 8-66
Measures Ceiling At Wichita Airport 2-172
Microwave Approach And Landing System....Spicer 8-52
Microwave Instrument Blind Landing System 2-60
Operational Principles of Racon Equipment 4-87
Radio Telemetering....ABS 3-72
The Block System for Airway Control 12-54
TV Reconnaissance 5-96

AUTOMOTIVE AND HEAVY METAL

Alloy Analysis....TOJ 1-90
Electronic Wheel Balancer....TOJ 9-98
Ignition System....NPI 12-78
Inspecting Steel With Million-Volt X-Ray Unit....SWR 8-79
Measuring Time....TOJ 4-93
Mobile Radio Service 4-84
Piston Ring Gage....TOJ 1-91
Steel Injection....TOJ 1-90
Steel Temperatures ....TOJ 4-93
Stress Measurements On Steel Trusses....TOJ 9-99
Ultrasonic Vibrations Reveal Hidden Flaws 1-64

CHEMICAL AND PROCESS INDUSTRIES

Indicating Changes in Concentration....SWR 2-100
Chemists Want Super Reliability....Ewald 9-85
Electronic Uses in Petroleum Refining 7-58
Evacuation Leakage Check....TOJ 8-76
Geiger Counter Spectrometer in Powder Metallurgy....SWR..8-78
Oilmen See Expanding Utility....Roess 9-85

FOOD

Vegetable Processing....TOJ 2-93
Automatic Bean Sorter....TOJ 4-92
Electronic Coffee Roaster....TOJ 7-78
Electronic Weeny Cooker....TOJ 4-92
Food Industry Bettering Quality....Steele 9-86
Walnut Sorting....TOJ 5-78

ENTERTAINMENT (MOVIES, MUSIC)

Electronic Control for Projector Arcs....TOJ 12-74
Electronic Cueing Device....TOJ 8-76
Room-Noise AVC....TOJ 6-77

INDUSTRIAL COMMUNICATION

Freightyard Radio Network....TOJ 1-90

MEDICAL

Brain Wave Recorder in Medical Diagnosis....Offner 1-72
Electro-Cardiograph....TOJ 5-79
Fever Measurements....TOJ 12-75

MISCELLANEOUS

Aerial Prospecting....SWR 9-101
Airplane Noise Interferes With Seismic Prospecting....SWR...8-78
Electronic Coin Rejector....TOJ 9-99
Electronic Uses in Industry....White 6-66
Industry Studies New Circuit Technics 9-66
Magnetostriction in Industry Processes....Sloane 10-74
Reel Regulator....TOJ 9-99
Rubber Weighing....TOJ 9-98

PRODUCTION METHODS

Die Cast Chassis 8-51
Engineered Assembly 7-53
Insulation Laboratory 3-76
Manufacture and Use of Glass Bonded Mica..Replogle 4-94
Mass Production....Shea 6-51
Printed Circuit Wiring 4-90
Production Economies....TOJ 1-91
Production Grinding....TOJ 1-90

TRANSPORTATION

Aieron Induction RR Radio Authorized.....5-98
FM Railroad Radio Satellite System....Halstead.....6-62
Mobile Radio For Trucks....TOJ.....9-98
Smoke-Free Passenger Coaches 7-142

MILITARY APPLICATION

Bomb Steering Mechanism....NPI 12-78
Exploding Torpedoes....NPI 11-84
Infrared Detector Uses Nuclear Reaction....TOJ.....11-81
Land Mine Detector....SWR 6-80
Locating Guns....NPI 11-84

VII CIRCUIT ARRANGEMENTS and DESIGNS

AMPLIFIERS

Amplifier....NPI 4-110
Cascaded Klystrons....ABS 3-67
DC Amplifier Coupling....NPI 1-118
Direct Coupled Amplifier....NPI 9-102
HF Amplifier....NPI 7-82
Remote Amplifier for Broadcast Service....Wulfsberg.....12-70
Selective Amplifier....NPI 3-104
Stagger Tuned Amplifiers....ABS 3-73
Studio Control Unit....Peterson 12-68

OSCILLATORS

DC Beam-Cavity Oscillator....SWR 4-100
FM Oscillator-Discriminator Circuit....SWR 4-100
Frequency Measurement With Deflection-Modulated Tube....
SWR 1-97
Magnetostrictive Coupling....SWR 1-96
Microwave Stabilization....ABS 3-66
Multi-Phase HF Oscillator....NPI 6-82
Non-Linear Mixers.....SWR 7-81
Radioactivity Meter For Nuclear Research....Bousquet.....9-88
RC Oscillator Design....SWR 1-97
Reflex Oscillators....ABS 3-65
Split-Anode UHF Oscillator....NPI 12-78
Test Oscillator For New AM-FM-Tele Needs....Muller 2-86
UHF Oscillator....NPI 8-80

DETECTION AND RECTIFIERS

Detector....NPI 9-102
Limiter Circuit....NPI 3-106

PULSE EQUIPMENT

Amplitude Modulated Pulse System....SWR 3-97
Electronic True Decade Counters....Shea 9-82
Outdoor Sound Propagation....SWR 8-79
Pulse Generator....NPI 9-102
Pulse Generator....SWR 10-81
Pulse Recorder....SWR.....12-76

NETWORKS AND FILTERS

Graphical Analyses of Nonlinear Circuits....SWR.....11-82
Graphical Solution Of Matching Problems....Glinski 8-64
Interconnecting Facilities....ABS 5-69
Matching Load to Tube Oscillator....SWR 12-77
Network Design Using Electrolytic Tanks....Kenyon 3-58
Non-Linear Bridge Circuits As Voltage Stabilizers....SWR...9-101
RC Oscillator Design....SWR 1-97
Theory & Design Of Double-Tuned Circuits....Lawson, Stone..4-62

OSCILLOGRAPHS

Three Beam Oscillograph....ABS 3-72

DISCRIMINATORS

Discriminator....NPI 8-80
FM Oscillator-Discriminator Circuit....SWR 4-100

MODULATION

Balanced Modulator....NPI 9-139
FM Noise Squelching System....NPI 11-84
Pulse-Time Modulation....SWR 7-80
Removing Pulse Noise....NPI 10-82
Wide Phase Shift Modulator....SWR 4-98

TRANSMISSION LINES, WAVES, CAVITIES

Broad Band Tube 12-57
Coupling Method for Dielectric Heating....Kleinberger.....6-78
DC Beam-Cavity Oscillator....SWR 4-100
Directional Couplers....ABS 3-72
Monochromatic X-Rays....ABS 5-D48
Resonant Cavities....Giacoletto 8-60
Rising Sun Pulsed & CW Magnetrons....Shea 8-46
Transmission Line Impedance Matching....SWR 5-D48
Tunable Microwave Cavity Resonators....Guarrera.....3-80

GENERAL

Dynatron Frequency-Divider....NPI 7-82
Elements Of A New Oscilloscope Design....Simmons 9-96
Graphical Analyses Of Nonlinear Circuits....SWR 11-82
High-Voltage Rectifier....ABS 3-66
Magnetostrictive Radar Clock....NPI 9-102
One Tube—One Relay Multi-Time Circuits....Wouk.....7-48
Protecting Against Carrier Failure....Towlson 11-68
Universal Chart For Unbalanced Bridge....Paine.....11-72

VIII PHYSICAL PHENOMENA and THEORY

ELECTRON PHYSICS

Computation Of Electron Lenses....SWR 11-83
Electron-Optical Method For Field Testing....SWR.....11-82
Electrostatic Field of Electron Beam....SWR 12-76
Emission From Cesium Or Thorium-Coated Tungsten Filaments....SWR 9-100
Emission From Tungsten Oxide Films....SWR.....9-100
High Dispersion Electron Diffraction....SWR 3-97
Infrared Detector Uses Nuclear Reaction....TOJ.....11-81
Mathematics of Paraboloidal Reflectors....SWR 12-77
Oxide Coated Cathodes....SWR.....12-77
Plasma Phenomena....SWR 10-81

NUCLEAR PHYSICS

Electron Accelerator Improvements....NPI 10-82
Infrared Detector Uses Nuclear Reaction....TOJ 11-81
Particle Injector For Accelerator....NPI 7-98

WAVE PROPAGATION

Atmospheric Ducts In Propagation....ABS 3-71
Propagation Effects 2-65
Re-Radiation Affects Video Contrast....SWR 8-79
Six MM. Wave Propagation....ABS 6-71
Sky-Wave Propagation....ABS 3-72
Study Of Multipath Transmission....SWR 11-83

MISCELLANEOUS

Dielectric Theory....SWR 10-81
Effects of Humidity On Dielectrics....SWR 9-137
Graphical Analyses Of Nonlinear Circuits....SWR 11-82
Piezoelectric Recorder....SWR 11-83
Protecting Against Carrier Failure....Towlson 11-68
Radar Principles....SWR 11-83

ULTRASONICS

Supersonic Tire Tester....TOJ 11-80
Ultrasonic Vibrations Reveal Hidden Flaws 1-64

OPTICAL

Computation Of Electron Lenses....SWR 11-83
Lens Aberration In Picture Projection....Montani 1-86
Mathematics of Paraboloidal Reflectors....SWR 12-77

MAGNETOSTRICTION

Magnetostriction In Industry Processes....Sloane 10-74
Magnetostrictive Oscillator Coupling....SWR 1-96

MATHEMATICAL COMPUTATION SYSTEMS

Differential Analyzer 10-62
Graphical Analyses Of Nonlinear Circuits....SWR 11-82
Network Design Using Electrolytic Tanks....Kenyon.....3-58
New GE Brain For University Of California 2-89
Super Electronic Computing Machine....Burks 7-62

IX GENERAL ENGINEERING

ENGINEERS

Electronic Forum Covers Wide Field 12-46

PROFESSIONAL REVIEWS

Engineers Study FM 5-66
IRE-URSI Convene 7-75

SOCIETIES AND ORGANIZATIONS

Electronic Forum Covers Wide Field 12-46
Federal Agencies 10-96
Instrumentation 11-59
IRE Winter Technical Meeting Draws 7000.....3-62

STANDARDIZATION

Disc Recording....Chinn 11-64
System Standards 10-72

MAINTENANCE, REPAIR AND PRODUCTION

Engineered Assembly 7-53
Inspection Of Castings....SWR 11-83
Marketing—Now The Twin Problem With Production.... Newton 5-82
Mass Production....Shea 6-51
Protecting Against Carrier Failure....Towlson 11-68
Radar Assembly & Testing Operations 2-84
Removing Wire Insulation 9-101

MARKET PLANNING AND SELLING

Cultivate Exports!....Shea 5-80
Electronic Surplus....Shea 8-70
Marketing—Now The Twin Problem With Production.... Newton 5-82

GENERAL

Electronic Naval Warfare....ABS 3-73
Electronic Surplus....Shea 8-70
Federal Agencies 10-96
Instrumentation 11-59
Instrument Trends....Heinz 11-55
$1000 Award Winners 6-59
Progress Depends On Sound Engineering....Stobbe 2-72
Tele Interference—Engineering Problem....Goldsmith 7-60

FREQUENCY ALLOCATIONS

FM Channel Numerology 9-160

STATISTICS

FCC Studies Users 1-126
1946 Radio Statistics 1-63

ELECTRONIC APPLICATIONS INDEX

Industrial Electronic Applications 6-67

X DEPARTMENTS and FEATURES

BOOKS REVIEWED

Alignment Charts, Construction & Use....Kraitchnik.....2-164
A.S.T.M. Standards On Electrical Insulating Materials.... A.S.T.M. 3-154
Aviation Radio....Roberts 2-162
Basic Electrical Engineering....Fitzgerald 1-128
Capacitors, Their Use in Electronic Circuits....Brotherton..12-118
Electrical Transmission In Steady State....Selgin 11-144
Electric Circuits & Machines....Lister 2-164
Electricity & Magnetism....Sears 8-112
Electron & Nuclear Counters....Korff 7-112
Electronic Engineering Master Index (1925-1945).... Petraglia 1-128
Electronic Engineering Master Index (1935-1945).... Petraglia 11-145
Electronics In Industry....Chute 8-112
Electron Optics & The Electron Microscope.... Zworykin, Morton, Ramberg, Hillier & Vance.....7-110
Elementary Electric Circuit Theory....Frazier 5-160
Elementary Engineering Electronics....Kramer 1-128
Fundamental Theory Of Servomechanisms....MacColl 2-163
German For The Scientist....Wiener 10-114
Handbook Of Dry Plate Rectifier Applications....Culbertson..5-156
Heaviside's Electric Circuit Theory....Josephs.....12-117
Higher Mathematics For Students Of Chemistry & Physics.... Mellor 11-145
High Vacuum Technique....Yarwood 6-130
Inductance Calculations....Grover 9-140
Introduction To Microwaves....Ramo 4-151
Luminous Tube Lighting....Miller 10-114
Major Instruments Of Science & Their Applications To Chemistry....Burk, Grummitt 3-153
Metallizing Non-Conductors....Metal Ind. Pub. Co.....9-140
Polar Molecules....Debye 11-144
Principles Of Industrial Process Control....Eckman.....2-161
Principles Of Radio For Operators....Atherton 2-163
Proceedings Of The Society For Experimental Analysis, Vol. III, No. 1....Lipson, Murray 5-156
Quartz Crystals....Heising 7-110
Radar, What Radar Is & How It Works....Dunlap 4-150
Radio Pioneers....Westman 5-160
Radio's Conquest of Space....McNichol 12-118
Radio Sound Effects....Creamer, Hoffman.....1-128
Radio Test Instruments....Turner 3-154
Reference Data for Radio Engineers....Fed. Tel. & Radio Corp. 12-117
Relay Engineering....Packard 6-130
Scientific Instruments....Cooper 10-114
Simple Calculation Of Electrical Transients....Carter.....1-128
Television—Eyes Of Tomorrow....Eddy 2-162
Theory of Sound....Raleigh 5-156
Transmission Lines, Antennas & Wave Guides.... King, Mimno & Wing 4-150
Two-Way Radio....Freedman 3-153
Understanding Microwaves....Young 8-112

XI CHARTS, NOMOGRAPHS, DIRECTORIES

CHARTS, SUPPLEMENTAL

Frequency Modulation Systems Engineering 4-Sup
Industrial Electronic Measurement & Control 9-Sup
Sources Of Television Interference 7-Sup
Television Progress 1941-1946 .....10-Sup

NOMOGRAPHS

Nomograph For FM Deviation 4-70
Nomograph For Frequency & Phase Deviation.....4-79

DIRECTORIES

1945 Engineering Directory 1-98
1946 Electronic Engineering Directory.....Opp. 5-96
Radio Stations 5-89
Set Manufacturers 5-93
Show Exhibitors 5-95

AUTHOR INDEX ON FOLLOWING PAGE

AUTHOR INDEX

BATCHER, RALPH R.
FM Systems Engineering 4-75
Industrial Relay Control Circuits....2-94
Surveying Recent Television Advances 10-46
Vacuum Tubes In Instrumentation...9-80

BAUMANN, HAROLD C.
30 KV Power Supply 10-77

BOUSQUET, ARTHUR G.
Radioactivity Meter For Nuclear Research 9-88

BURKS, DR. ARTHUR W.
Super Electronic Computing Machine.7-62

CAPPS, ISABEL L.
Recording Styli 11-65

CHALFIN, NORMAN L.
Coil Short Tests 5-77

CHINN, HOWARD A.
Disc Recording 11-64

CLEVELAND, CAPTAIN E. L.
Flight Research On Precipitation Static 8-66

COCKRELL, W. D.
Saturable Reactors for Automobile Control 12-48

COLES, CHARLES H.
Electronic Timing Of Sequence Photographs 2-74

COLTMAN, DR. J. W.
Telemetering For Project Crossroads..9-76

DAVIDSON, DAVID
Loran Indicator Circuit Operation....3-84

DOLINKO, LOUIS
Bettering Output From Power Tubes.12-60

DRESSEL, R. W. (with D. Rawcliffe)
Magnetic Focusing and Deflection...10-52

ERHORN, PHILIP C.
Nuernberg Trials Recording System..6-70

EWALD, PHILIP
Chemists Want Super Reliability.....9-85

FELDT, RUDOLPH
Long Persistence CR Tube Screen...10-70

FRANKART, WILLIAM F.
Laboratory Receiver 2-71

GARDNER, K. J.
WHFM's FM Converter 4-80

GERMESHAUSEN (with R. S. John)
Phonograph Pickup Using Strain Gage 11-78

GIACOLETTO, L. J.
Resonant Cavities 8-60

GLINSKI, G.
Discontinuity Effects 2-97
Graphical Solution Of Matching Problems 8-64

GOLDSMITH, DR. T. T.
Tele Interference—Engineering Problem—Part I 7-60
Tele Interference—Part II 8-73

GUARRERA, J. J.
Tunable Microwave Cavity Resonators 3-80

GUYER, E. M.
HF Glass Working 12-65

HALE, N. H. (with R. W. May)
Automatic Positioning Control Mechanisms 1-58

HEINZ, WINFIELD B.
Instrument Trends 11-55

HALSTEAD, WILLIAM S.
FM Railroad Satellite System....6-62

HUNTER, PAUL H.
Electronic Gaging 9-68
Phase Sensitive Bridge Detector....6-60
TV Test Equipment 10-49

JOHN, R. S. (with Kenneth J. Germeshausen)
Phonograph Pickup Using Strain Gage 11-78

JONES, WILLIAM T.
Microwave Test & Measuring Equipment 11-48

KANDOIAN, A. G.
Coaxial Feed FM Loop Antennas....5-74

KENYON, RICHARD W.
Network Design Using Electrolytic Tanks 3-58

KLEINBERGER, RICHARD C.
Coupling Method For Dielectric Heating 6-78

KNIGHT, C. R.
Magnetic Control of Anode Current.12-72

KRUSHEL, IRVING
Phosphors & Their Behavior In Television 1-92

LAWSON, J. L. (with A. M. Stone)
Theory & Design Of Double-Tuned Circuits 4-62

LEIDEL, WM. F. JR. (with N. E. Payne)
Tuned-Ribbon Pickup 10-67

MAIER, PIERRE ERIC
Humidity Recording 7-70

MAY, R. W. (with N. H. Hale)
Automatic Positioning Control Mechanisms 1-58

MINTER, JERRY
Rhombic Antennas For Television...10-58

MONTANI, ANGELO
Lens Aberrations In Picture Projection 1-86

MULLER, WERNER
Production Bridge For Incremental Tests 5-72
Test Oscillator For New AM-FM-Tele Needs 2-86

NEWTON, MILLARD H.
Marketing—Now The Twin Problem With Production 5-82

OFFNER, FRANKLIN, Ph.D.
Brain Wave Records In Medical Diagnosis 1-73

O'NEILL, G. D.
Separate Cavity Tunable Magnetron..6-48

PACKARD, L. E.
Z-Meter 12-42

PAINE, R. C.
Universal Chart For Unbalanced Bridge 11-72

PAYNE, N. E. (with Wm. F. Leidel)
Tuned-Ribbon Pickup 10-67

PETERSON, N. J.
Studio Control Unit 12-68

PICKERING, NORMAN C.
Measuring Audio Intermodulation....6-56

PRITCHETT, WILSON
Feeding Combined FM and AM Antenna Arrays 4-72

QUANCE, F. R. (with H. B. Seabrook)
Canada's New Short Wave Transmitter 7-72

RAWCLIFFE, D. (with R. W. Dressel)
Magnetic Focusing & Deflection....10-52

REPLOGLE, D. E.
Manufacture & Use Of Glass Bonded Mica 4-94

ROESS, L. C.
Oilmen Seek Expanding Utility....9-85

SATHER, ORVILLE J.
CBS Tele Antenna 7-68

SEABROOK, H. B. (with F. R. Quance)
Canada's New Short Wave Transmitter 7-72

SHEA, H. GREGORY
Cultivate Exports! 5-80
Electronic Surplus 8-70
Electronic True Decade Counters....9-82
Larger FM Carrier Suppresses Smaller 4-78
Mass Production 6-51
Rising Sun Pulsed & CW Magnetrons..8-46
Theory of Magnetron Tubes & Their Uses 1-66

SIMMONS, ELMER C.
Elements of a New Oscilloscope Design 9-96

SLOANE, FRANCES
Magnetostriction In Industry Processes 10-74

SPICER, W. T.
Microwave Approach & Landing System 8-52

STEELE, HAROLD K.
Food Industry Bettering Quality....9-86

STOBBE, DR. JOHN ALBERT
Progress Depends On Sound Engineering 2-72

STONE, A. M. (with J. L. Lawson)
Theory & Design Of Double-Tuned Circuits 4-62

TOWLSON, H. G.
Protecting Against Carrier Failure..11-68

WAIDELICH, D. L.
Power Measurements At Audio Frequencies 2-68

WEILLER, DR. PAUL G.
New Power Operated Sensitive Recorder 1-88

WHITE, W. C.
Electronic Uses In Industry....6-66

WOUK, VICTOR
One Tube—One Relay Multi-Time Circuit 7-48

WULFSBERG, PAUL
Remote Amplifier for Broadcast Service 12-70

ZENTNER, JOSEPHA, Ph.D.
Point-by-Point Construction Of FM Wave 4-77